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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,990	12/05/2001	Sanjay Kamath	000461	6494

23696 7590 09/06/2005

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

SWEARINGEN, JEFFREY R

ART UNIT	PAPER NUMBER
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2145

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/010,990

Applicant(s)

KAMATH ET AL.

Examiner

Jeffrey R. Swearingen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date multiple.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 10-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 10-18 are directed to a system that is claimed as software, *per se*. All claims seem to be directed to software modules.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

5. Claims 1-37 are directed toward determining a window size when a number of transmitted data packets is equal to or greater than a pre-determined threshold number. However, there is insufficient support within the specification to describe the relationship between the window size and the transmitted data packets. The closest support that is found in the disclosure is on page 14, paragraph 1034. At this point in the disclosure, Applicant states that the window size is reduced as the buffer receives more data packets from the base station controller and increased as data packets are transmitted from the buffer to wireless access terminals. This does not explain to one of ordinary skill in the art how to determine the window size for this invention. One of ordinary skill in the art would suffer the undue burden of experimentation in attempting to grasp how to implement the window size determination based upon this limited explanation. The Examiner also has noted on page 6 of the disclosure the following statement:

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"Moreover, certain details have been left out in order to not obscure the inventive aspects of the invention. The specific details not described in the present application are within the knowledge of a person of ordinary skill in the art." The determination of window size based upon the number of packets received in the instant application would be outside the knowledge of a person of ordinary skill in the art.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 33 and 36 reference a fifth, sixth, and seventh code segment. Claim 30, upon which they depend, only supports a first, second, and third code segment. Because of this discrepancy, there is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-2, 4, 6-7, 10-11, 13, 15-16, 19, 25, 30-31, 33, and 35 are rejected under 35

U.S.C. 102(b) as being anticipated by Barzilai et al. (U.S. Patent No. 5,063,562).

10. In regard to claim 1, Barzilai discloses *incrementing a flow indication counter indicating an updated number of data packets transmitted from a buffer* (column 6, lines 5-9); *determining a window size of said buffer when said updated number of data packets transmitted from said buffer is equal to or greater than a threshold number* (column 6, line 42 – column 7, line 50); *generating a flow indication message, said flow indication message indicating said window size* (column 5, lines 42-46).

11. In regard to claim 2, Barzilai is applied as in claim 1. Barzilai further discloses *transmitting said flow indication message*. (column 5, lines 44-46).

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12. In regard to claim 4, Barzilai is applied as in claim 1. Barzilai further discloses *determining a packet ID of a data packet received by said buffer before said generating step.* (column 5, lines 16-51, where multiple bits such as the RQS/RSP bit, the pacing bit, and the WR bit give information about the packet - a packet ID – to the recipient)

13. In regard to claim 6, Barzilai is applied as in claim 4. Barzilai further discloses *said flow indication message further comprises said packet ID.* (The pacing bit and RQS/RSP bits are used in the response to the sender. column 5, lines 22-35, lines 42-51)

14. In regard to claim 7, Barzilai is applied as in claim 6. Barzilai further discloses *transmitting said flow indication message.* (column 5, lines 44-46)

15. Claim 10 meets the same limitations as claim 1; therefore Barzilai is applied against claim 10 as in claim 1.

16. Claim 11 meets the same limitations as claim 2; therefore Barzilai is applied against claim 11 as in claim 2.

17. Claim 13 meets the same limitations as claim 4; therefore Barzilai is applied against claim 13 as in claim 4.

18. Claim 15 meets the same limitations as claim 6; therefore Barzilai is applied against claim 15 as in claim 6.

19. Claim 16 meets the same limitations as claim 7; therefore Barzilai is applied against claim 16 as in claim 7.

20. Claim 19 meets the same limitations as claims 1, 2 and 4; therefore Barzilai is applied against claim 19 as in claims 1, 2 and 4.

21. Claim 25 meets the same limitations as claims 1, 2 and 4; therefore Barzilai is applied against claim 25 as in claims 1, 2 and 4.

22. Claim 30 meets the same limitations as claim 1; therefore Barzilai is applied against claim 30 as in claim 1.

23. Claim 31 meets the same limitations as claim 2; therefore Barzilai is applied against claim 31 as in claim 2.

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24. Claim 33 meets the same limitations as claim 4; therefore Barzilai is applied against claim 33 as in claim 4.

25. Claim 35 meets the same limitations as claim 6; therefore Barzilai is applied against claim 35 as in claim 6.

Claim Rejections - 35 USC § 103

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

27. Claims 3, 12, 20, 26, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barzilai.

28. In regard to claims 3, 12, 20, 26, and 32, Barzilai is applied as in claims 1, 10, 20, 25, and 30. Barzilai discloses setting thresholds or limits on the minimum window size and a damping factor in column 6, lines 56-68 to keep flow control within acceptable levels. Both are "tunable parameters and used for practical reasons." Therefore, one of ordinary skill in the art would be motivated to use any appropriate parameters to construct an appropriate threshold for an implementation of Barzilai, including the number 50.

29. Claims 5, 14, 21-22, 27, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barzilai in view of Mangin (U.S. Patent No. 6,925,060).

30. In regard to claims 5, 14, 21-22, 27, and 34, Barzilai is applied as in claims 4, 13, 19, 25, and 33. Barzilai fails to disclose the use of a last packet ID. However, Mangin in the same field of endeavor of reestablishing TCP window size based upon packet flow information discloses controlling a window size parameter based upon the sequence number of the last segment that was transmitted from the node of the connection. Therefore it would be obvious to one of ordinary skill in the art to combine the teachings of Mangin with the Barzilai invention in order to prevent congestion in a network. (Mangin, column 7,

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lines 16-49; Barzilai, column 2, lines 24-41) In regard to claim 22, the additional limitations of this claim are taught in the rejection of claim 6 by Barzilai.

31. Claims 8-9, 17-18, 23-24, 28-29, and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barzilai in view of Mogul (U.S. Patent No. 6,560,243).

32. In regard to claims 8, 17, 23, 28, and 36, Barzilai is applied as in claims 1, 10, 19, 25, and 30. Barzilai does allow for designation of a flow as being IDLE (column 8, lines 46-68). Barzilai fails to disclose keeping track of idle time in a flow and retransmitting based on that idle time in order to keep the connection active. However, Mogul does disclose delaying the transmission of an ACK packet (flow indication message) for a set period of time to acknowledge a certain packet. (Mogul, column 7).

Therefore it would be obvious to one of ordinary skill in the art to alter the time between transmission of a flow indication message and the receipt of the last packet (causing the flow to become idle) in order to get the best performance out of the network traffic. (Mogul, column 8, lines 3-11; Barzilai, column 2, lines 24-41; Barzilai, column 4, lines 40-51)

33. In regard to claims 9, 18, 24, 29, and 37, Barzilai in view of Mogul is applied as in claims 8, 17, 23, 28, and 36. Neither Barzilai nor Mogul explicitly state that 0.5 seconds should pass between the transmission of an ACK. However, both Mogul and Barzilai give one of ordinary skill in the art motivation to alter the amount of time used before transmission of an ACK based on gaining optimal performance. (Mogul, column 7, lines 21-24, lines 44-50, column 8, lines 3-11; Barzilai, column 6, lines 43-68).

Therefore it would be obvious to one of ordinary skill in the art to use any time period, including 0.5 seconds, as a threshold parameter to alter window size.

Conclusion

34. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wen et al.	U.S. Pub. No. 2003/0193893
Vernon	U.S. Pub. No. 2002/0172153
Packer	U.S. Pub. No. 2002/0031088
Jacobson et al.	U.S. Patent No. 6,934,256

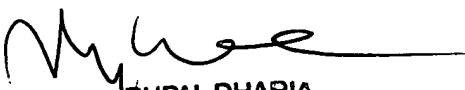
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Montuno et al.	U.S. Patent No. 6,928,054
Aweva et al.	U.S. Patent No. 6,894,974
Lindsay	U.S. Patent No. 6,788,704
Ludwig	U.S. Patent No. 6,754,228
Aubert et al.	U.S. Patent No. 6,388,992
Packer et al.	U.S. Patent No. 6,205,120
Jain	U.S. Patent No. 5,193,151

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. Swearingen whose telephone number is (571) 272-3921. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RUPAL DHARIA
SUPERVISORY PATENT EXAMINER